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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/575,280

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Winfried Bunsmann

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EXAMINER

VANAMAN, FRANK BENNETT

ART UNIT

PAPER NUMBER

3618

MAIL DATE

DELIVERY MODE

03/02/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,280	Applicant(s) BUNSMANN ET AL.	
	Examiner Frank B. Vanaman	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 December 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Status of Application

1. Applicant's amendment, filed Dec. 15, 2009, has been entered in the application. Claims 1-13 are pending, with claim 13 being newly added.

Claim Rejections - 35 USC § 103

2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. Claims 1 and 8-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Browne et al. (US 3,211,491). Browne et al. teach a motor vehicle (11) having a body or frame (12, 13, 14) provided with at least one strut (19) which can move longitudinally relative to the body as a result of longitudinal stress and/or deformation of the body, including plural parts which move with respect to each other (21, 22) and extend over at least almost the entire strut (note figure 1), the portions movable with respect to an energy converter (26) which at least partially converts kinetic energy of motion into another form of energy (e.g., heat due to internal friction associated with the deformation of the converter) damping the relative motion. As regards the conversion of kinetic energy to heat, note that deformation of a material results when the internal friction of the constituents of the material is overcome, and it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the converter (26) as a material having a non-zero internal friction for the purpose of ensuring that the converter delivers a reaction force which actually provides a damping characteristic, so as to damp the vibration that the strut is taught to damp. In that heat, resulting from deformation due to overcoming internal friction, is a form of energy, and in that such heat is generated mechanically, Browne et al. teach the production of heat energy by mechanical means which is understood to constitute mechanical energy to the breadth it is recited in applicant's independent claims 1 and 12.

As regards claim 10, the reference to Browne et al. fails to specifically teach that the movement of the relatively movable parts of the converter "can be more than a millimeter". Where a general condition is taught (in this case, the relative movement between the members), an adjustment of the magnitude of the condition is known to be within the skill of the ordinary practitioner, at least when such an adjustment yields a

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predictable result. In this case, it would have been obvious to one of ordinary skill in the art at the time of the invention to allow the motion of the relatively movable parts to be more than a millimeter in order to facilitate damping of higher amplitude vibrations which result in relative body motion of a magnitude greater than one millimeter, such as the damping of vibration associated with a very rough road or badly balanced tire.

As regards claim 11, the reference to Browne et al. fails to specifically teach the use of a common energy converter to which more than one strut is connected. Browne et al. do teach that the strut portions closer to the vehicle cabin (away from the viewer, figure 1) are mounted close to one another, and in that it is well held in the mechanical arts to be within the skill of the ordinary practitioner to (1) reposition an already taught element and to (2) integrate plural elements into a single element, it would firstly have been obvious to one of ordinary skill in the art at the time of the invention to reposition the converter portions of the struts proximate one end of each strut taught by Browne et al. such as proximate the vehicle cabin, for the purpose of reducing the size of the strut portion which is located over the open compartment, thus allowing improved access to the contents of the compartment, such as the engine and in that such a repositioning would place the converter portions very closely proximate one another, it would secondly have been obvious to one of ordinary skill in the art at the time of the invention to integrate both converters into a single assembly which mounts the cabin end portions of each strut, for the purpose of condensing the space required to locate and mount the converters (in that both converters would be mounted in a common single housing or on a common single mount) and reducing the number of parts required to mount the struts at their respective ends proximate the cabin.

4. Claims 2, 4-7 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Browne et al. in view of Margolis (US 5,570,286). The reference to Browne et al. is discussed above and fails to teach the energy converter as explicitly converting the energy into one of electric or hydraulic energy, and further being connected to an energy storage device, including a pressure medium reservoir which may be compressed by a moving part, or a coil that is penetrated by a moving part of the strut.

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Margolis teach that it is well known to provide different types of converters for absorbing relative motion between movable portions of a strut (note strut and converter assemblies 104, 114, 20a, 20b, 20c, 47, 47', etc), which are connected to an energy storage device (32, or 78, or 92), the arrangement optionally including at least a pressure medium reservoir (67, 68, 67', 68' or 94, 95) which can be compressed by a moving part (70, or 70', or 96), and/or wherein fluid can be moved by the moving part (70, 71), and/or wherein a coil arrangement (44) is penetrated by a magnet (42) to generate electricity (to be stored in 32). It would have been obvious to one of ordinary skill in the art at the time of the invention to use one of the alternative converter devices as taught by Margolis (and which may be alternatively usable) - the compressible reservoir, the fluid moving reservoir or the electrical coil arrangement, in place of the arrangement taught by Browne et al. which does not capture the dissipated energy, for the purpose of capturing the energy associated with the deformation, facilitating more efficient vehicle operation rather than wasting the energy which has been dissipated. As regards claim 7, the reference to Margolis teaches that the storage device (32) may be a capacitor, but does not explicitly teach that the device is a battery. In that it is well known to use a battery to store captured energy for extended periods of time, it would have been obvious to one of ordinary skill in the art at the time of the invention to provide the storage device taught by Margolis as a battery, rather than a capacitor, for the purpose of facilitating longer term storage of the captured energy.

5. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Browne et al. in view of Riad (US 5,934,419). The reference to Browne et al. is discussed above and fails to teach the use of a contact brake surface which engages a moving part to provide external frictional damping. Riad teaches that it is well known in the art of vibration damping to use a frictional damping device including a moving part (109, 110) which is frictionally engaged with a strut portion (interior of 101) to damp vibration, the arrangement taught to be beneficial to conditions involving sudden movement between the relatively movable parts. It would have been obvious to one of ordinary skill in the art at the time of the invention to provide the converter portion taught by Browne et al.

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as an external frictional absorber, including two relatively movable elements which are frictionally engaged with each other, as taught by Riad, for the purpose of providing a beneficially improved damping for high speed, high amplitude vibrations (i.e., characterized by the vibration amplitude with time having a very steep slope).

Response to Comments

6. Applicant's comments, filed with the amendment, have been carefully considered. As regards the reference to Browne et al. it appears as though applicant is attempting to assert that the taught dampers are entirely rigid, which is, of course, not correct. As best understood, this constitutes an assertion which is not supported by a showing of facts, and applicant is reminded that the arguments of counsel cannot take the place of evidence in the record. In re Schulze, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965).. Note that elements 21/23 and 22/24 are made from metallic strapping, and that element 26 is made from a viscoelastic material (col. 2, lines 32-41), the viscoelastic material being explicitly disclosed as being a flexible member (col. 2, lines 50-54), the use of entirely rigid connections being explicitly deemed less desirable (col. 1 lines 63-64 and col. 2, lines 20-25), the damper explicitly taught as being connected between elements which move with respect to one another, the damper absorbing the relative motion (col. 1, lines 37-44). If the element were entirely rigid as applicant would like to assert, the device would not actually be functional. Note further that Browne et al. specifically refer to the absorption characteristics of some tested materials (see col 2, lines 59-64), applicant is reminded that no absorption would occur if the strut were entirely rigid (in which case only transmission would occur), whereas Browne et al. provide factual data clearly and unequivocally supporting absorption. As regards the conversion of energy, initially applicant is directed to the reference to Browne et al. at col. 1 lines 57-61 which explicitly refers to the dissipation of relative motion through shear, tension or compression as being due to at least internal friction, which converts relative motion into heat. In the case that applicant attempts in the future to assert that absorption of motion by internal friction somehow does not result in the generation of heat, applicant may desire to note that such an argument would be

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contradictory to the requirements of the general laws of conservation of energy, and furthermore certain of the references cited below well establish that damping of motion due to internal friction of a material results in the generation of heat. Since motion is converted to another form of energy, conversion is understood to occur, and since the conversion is obtained through mechanical motion of the element the conversion is understood to be of a mechanical nature.

As regards claim 12, note that elements 11, 12, 13, 14, 15, 16, 17 and 18 may all be interpreted as being a frame to the breadth that this limitation is actually recited in the claims, based on a commonly held understanding of the meaning of the term (i.e., something composed of parts fitted together and united, and/or a constructional system that gives shape or strength).

As regards newly added claim 13, applicant asserts that a conversion to hydraulic energy is not shown in any cited reference. This is at odds with the factual teachings of the references which are cited and of record. Note the reference to Margolis, which was cited previously and relied upon previously, and which reference very specifically refers to the conversion of relative motion in a strut device to hydraulic energy. Margolis teach that it is well known to provide different types of converters for absorbing relative motion between movable portions of a strut (note strut and converter assemblies 104, 114, 20a, 20b, 20c, 47, 47', etc), which are connected to an energy storage device (32, or 78, or 92), the arrangement optionally including at least a pressure medium reservoir (67, 68, 67', 68' or 94, 95) which can be compressed by a moving part (70, or 70', or 96), and/or wherein fluid can be moved by the moving part (70, 71).

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Troyer (US 3,670,593), Bremer, Jr. (US 3,945,269), Strader (US 4,487,592), and Walters (US 5,369,952) teach that it is very well established that a damper generates heat energy mechanically through internal or external friction.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry specifically concerning this communication or earlier communications from the examiner should be directed to F. Vanaman whose telephone number is 571-272-6701.

Any inquiries of a general nature or relating to the status of this application may be made through either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A response to this action should be mailed to:

Mail Stop _____
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450,

Or faxed to:

PTO Central Fax: 571-273-8300

F. VANAMAN
Primary Examiner
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